Amendments to the Claims

1. (canceled) A method of processing transmit signals Str that are received over a receive channel Crcv which is formed by a plurality of receive paths, the method comprising the steps of:

receiving said transmit signals Str with a plurality of spatially separated antennas to form respective receive signals Srcv;

and

spatially and temporally processing said receive signals Srcv to form a combined corrected signal Scrctcmb that reduces errors in at least one signal parameter.

2. (canceled) The method of claim 1, wherein said transmit signals Str have an average wavelength lavg and said receiving step includes the step of separating said antennas by spaces of substantially lavg/2.

3. (canceled) The method of claim 1, wherein said processing step is preceded by a step of coherently downconverting and digitizing said received signals Srcvd.

4. (canceled) The method of claim 3, wherein said transmit signals Str carry modulated data signals and further including the step of demodulating said combined corrected signal Scrctcmb to recover said data signals.

5. (canceled) The method of claim 1, wherein said signal parameter is a signal preamble.

6. (canceled) The method of claim 1, wherein said signal parameter is a signal code.

7. (canceled) The method of claim 1, wherein said signal parameter is a spreading code.

8. (canceled) The method of claim 1, wherein said signal parameter is a signal modulation.

9. (currently amended) ~~The~~ A method of ~~claim 1~~ processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the method comprising the steps of:

receiving said transmit signals S_{tr} with a plurality of spatially separated antennas to form respective receive signals S_{rcv}; and

spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said processing step includes the step of correcting said received signals S_{rcvd} to form respective corrected signals S_{crct} that reduce errors in said signal parameter and further including the steps of:

comparing said signal parameter of at least one of said corrected signals S_{crct} to a known corresponding signal parameter to detect a difference; and

altering phase and gain of said corrected signals S_{crct} to reduce said difference below a predetermined threshold and thereby reduce the contribution of an interference signal to said combined corrected signal $S_{crctcmb}$.

10. (currently amended) ~~The~~ A method of ~~claim 1~~ processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the method comprising the steps of:

receiving said transmit signals S_{tr} with a plurality of spatially separated antennas to form respective receive signals S_{rcv}; and

spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said processing step includes the step of correcting said received signals S_{rcvd} to form respective corrected signals S_{crct} that reduce errors in said signal parameter and further including the steps of:

comparing said signal parameter of at least one of said corrected signals S_{crct} to a known corresponding signal parameter to detect a difference; and

inserting a canceling signal into said corrected signals S_{crct} to reduce said

difference below a predetermined threshold and thereby reduce the contribution of an interference signal to said combined corrected signal $S_{crctcmb}$.

11. (currently amended) ~~The~~ A method of ~~claim 1~~ processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the method comprising the steps of:

receiving said transmit signals S_{tr} with a plurality of spatially separated antennas to form respective received signals S_{rcvd}; and

spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;s

wherein said processing step includes the steps of:

correcting said received signals S_{rcvd} to form respective corrected signals Scrct that reduce temporal errors in said signal parameter; and

combining said corrected signals S_{crct} to reduce spatial errors of said signal parameter in said combined corrected signal $S_{crctcmb}$.

12. (original) The method of claim 11, wherein said correcting step includes the step of equalizing said receive channel C_{rcv}.

13. (currently amended) The method of claim 12, wherein, for each of said received signals S_{rcvd}, said equalizing step includes the steps of:

summing versions of that received signal S_{rcvd} that are modified with respective weights and time delays to form a corrected signal S_{crct};

comparing said signal parameter of said corrected signal S_{crct} and a known corresponding signal parameter to detect a difference; and

updating said weights and time delays to reduce said difference.

14. (currently amended) The method of claim 13, wherein said equalizing step further includes the step of convolving one of said received signals S_{rcvd} with a known version of said signal parameter to determine said time delays.

15. (original) The method of claim 11, wherein said combining step includes the steps of:

providing said corrected signals S_{crct} with respective weights to form said combined corrected signal $S_{crctcmb}$;

comparing said signal parameter of said combined corrected signal $S_{crctcmb}$ and a known corresponding signal parameter to detect a difference; and

updating said weights to reduce said difference.

16. (currently amended) The method of claim 11, wherein said combining step includes the steps of:

comparing a spectrum of at least one of said corrected signals S_{crct} to a spectrum of a known corresponding signal parameter to detect a difference; and

altering phase and gain of said corrected signals S_{crct} to reduce said difference below a predetermined threshold and thereby reduce the contribution of an interference signal to said combined corrected signal Scrctcmb.

17. (currently amended) ~~The~~ A method of ~~claim 1~~ processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the method comprising the steps of:

receiving said transmit signals S_{tr} with a plurality of spatially separated antennas to form respective receive signals S_{rcv}; and

spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said processing step includes the steps of:

estimating said receive channel C_{rcv} to determine time delays that correspond to said receive paths;

for each determined time delay, summing corresponding received signals S_{rcvd} which are modified by respective weights to provide a respective corrected signal S_{crct} that reduces spatial errors in said signal parameter; and

with their respective time delays, combining all corrected signals S_{crct} derived in said summing step to realize said combined corrected signal

Scrctcmb.

18. (currently amended) The method of claim 17, further including the step of combining the results of said estimating step on at least two of said ~~received~~ signals $S_{rcv\text{~~d~~}}$.

19. (currently amended) The method of claim 17, wherein said estimating step includes the step of convolving one of said ~~received~~ signals $S_{rcv\text{~~d~~}}$ with a known signal parameter that corresponds to said signal parameter of ~~received~~ signals $S_{rcv\text{~~d~~}}$ to determine said time delays.

20. (currently amended) The method of claim 17, wherein said estimating step includes the steps of:

summing versions of one of said ~~received~~ signals $S_{rcv\text{~~d~~}}$ that have respective weights and time delays to form a test signal S_{tst};

comparing said signal parameter of said test signal S_{tst} and a known corresponding signal parameter to detect a difference; and

updating said weights and time delays to reduce said difference.

21. (currently amended) ~~The~~ A method of ~~claim 1~~ processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the method comprising the steps of:

receiving said transmit signals S_{tr} with a plurality of spatially separated antennas to form respective receive signals S_{rcv}; and

spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said processing step includes the steps of:

for each of said ~~received~~ signals $S_{rcv\text{~~d~~}}$, providing signal versions of that ~~received~~ signal $S_{rcv\text{~~d~~}}$ that have respective weights and time delays;

summing said signal versions of all of said ~~received~~ signals $S_{rcv\text{~~d~~}}$ to form said combined corrected signal $S_{crctcmb}$;

comparing said signal parameter of said combined corrected signal $S_{crctcmb}$ and a known corresponding signal parameter to detect a

difference; and

updating said weights and time delays to reduce said difference.

22. (currently amended) The method of claim 21, wherein said comparing step includes the step of convolving one of said received signals S_{rcvd} with a known version of said signal parameter to determine said time delays.

23. (currently amended) The method of claim 22, wherein said weights are complex coefficients.

24. (currently amended) (currently amended) ~~The~~ A method of ~~claim 1~~ processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the method comprising the steps of:

receiving said transmit signals S_{tr} with a plurality of spatially separated antennas to form respective receive signals S_{rcv}; and

spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

estimating said receive channel C_{rcv} to determine time delays and respective weights for reduction of temporal errors in said signal parameter;

applying complex corrections based on of said weights to said signal portions to obtain corrected signals S_{crct}; and

summing said corrected signals S_{crct} to obtain said combined corrected signal $S_{crctcmb}$.

25. (canceled) A receiver system for processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the system comprising:

a plurality of spatially separated antennas that convert said transmit signals S_{tr} to receive signals S_{rcv};

a downconverter system that coherently downconverts said receive signals S_{rcv};

analog-to-digital converters that coherently digitize said receive signals S_{rcv}; and

at least one data processor that is programmed to execute the step of spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter.

26. (canceled) The system of claim 25, wherein said transmit signals S_{tr} have an average wavelength lavg and antennas are separated by spaces of substantially lavg/2.

27. (canceled) The system of claim 25, wherein said transmit signals S_{tr} carry modulated data signals and further including a demodulator that demodulates said combined corrected signal $S_{crctcmb}$ to recover said data signals.

28. (currently amended) ~~The~~ A receiver system ~~of claim 25~~ for processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the system comprising:

a plurality of spatially separated antennas that convert said transmit signals S_{tr} to receive signals S_{rcv};

a downconverter system that coherently downconverts said receive signals S_{rcv};

analog-to-digital converters that coherently digitize said receive signals S_{rcv}; and

at least one data processor that is programmed to execute the step of spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said downconverter system includes:

downconverters that coherently downconvert and multiplex said receive signals S_{rcv} to different first intermediate signals;

tuners that coherently downconvert said first intermediate signals to second intermediate signals; and

a cable that couples said first intermediate signals to said tuners.

29. (canceled) The system of claim 25, wherein said signal parameter is a signal preamble.

30. (currently amended) ~~The~~ A receiver system ~~of claim 25~~ for processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the system comprising:

a plurality of spatially separated antennas that convert said transmit signals S_{tr} to receive signals S_{rcv};

a downconverter system that coherently downconverts said receive signals S_{rcv};

analog-to-digital converters that coherently digitize said receive signals S_{rcv}; and

at least one data processor that is programmed to execute the step of spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said processing step includes the steps of:

correcting said received signals S_{rcvd} to form respective corrected signals S_{crct} that reduce temporal errors in said signal parameter; and

combining said corrected signals S_{crct} to reduce spatial errors of said signal parameter in said combined corrected signal $S_{crctcmb}$.

31. (currently amended) ~~The~~ A receiver system ~~of claim 25~~ for processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the system comprising:

a plurality of spatially separated antennas that convert said transmit signals S_{tr} to receive signals S_{rcv};

a downconverter system that coherently downconverts said receive signals S_{rcv};

analog-to-digital converters that coherently digitize said receive signals S_{rcv}; and

at least one data processor that is programmed to execute the step of spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said processing step includes the steps of:

estimating said receive channel C_{rcv} to determine time delays that correspond to said receive paths;

for each determined time delay, summing corresponding ~~received~~ signals S_{rcvd} which are modified by respective weights to provide a respective corrected signal S_{crct} that reduces spatial errors in said signal parameter; and

with their respective time delays, combining all corrected signals S_{crct} derived in said summing step to realize said combined corrected signal $S_{crctcmb}$.

32. (currently amended) ~~The~~ A receiver system ~~of claim 25~~ for processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the system comprising:

a plurality of spatially separated antennas that convert said transmit signals S_{tr} to receive signals S_{rcv};

a downconverter system that coherently downconverts said receive signals S_{rcv};

analog-to-digital converters that coherently digitize said receive signals S_{rcv}; and

at least one data processor that is programmed to execute the step of spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said processing step includes the steps of:

for each of said ~~received~~ signals S_{rcvd}, providing signal versions of that ~~received~~ signals S_{rcvd} that have respective weights and time delays;

summing said signal versions of all of said ~~received~~ signals S_{rcvd} to form said combined corrected signal $S_{crctcmb}$;

comparing said signal parameter of said combined corrected signal $S_{crctcmb}$ and a known corresponding signal parameter to detect a difference; and

updating said weights and time delays to reduce said difference.

33. (currently amended) ~~The~~ A receiver system ~~of claim 25~~ for processing transmit signals S_{tr} that are received over a receive channel C_{rcv} which is formed by a plurality of receive paths, the system comprising:

a plurality of spatially separated antennas that convert said transmit signals S_{tr} to receive signals S_{rcv};

a downconverter system that coherently downconverts said receive signals S_{rcv};

analog-to-digital converters that coherently digitize said receive signals S_{rcv}; and

at least one data processor that is programmed to execute the step of spatially and temporally processing said receive signals S_{rcv} to form a combined corrected signal $S_{crctcmb}$ that reduces errors in at least one signal parameter;

wherein said processing step includes the steps of:

estimating said receive channel C_{rcv} to determine time delays and respective weights for reduction of temporal errors in said signal parameter;

applying complex conjugates of said weights to said signal portions to obtain corrected signals S_{crct}; and

summing said corrected signals S_{crct} to obtain said combined corrected signal $S_{crctcmb}$.

34. (new) The method of claim 9, further including the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

35. (new) The method of claim 10, further including the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

36. (new) The method of claim 11, further including the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

37. (new) The method of claim 17, further including the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

38. (new) The method of claim 21, further including the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

39. (new) The method of claim 24, further including the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

40. (new) The system of claim 30, wherein said processing step further includes the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

41. (new) The system of claim 31, wherein said processing step further includes the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

42. (new) The system of claim 32, wherein said processing step further includes the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.

43. (new) The system of claim 33, wherein said processing step further includes the step of selecting said signal parameter from parameters that include signal preamble, signal code, spreading code and signal modulation.